SECTION V. MAINTENANCE

10.5.1 INTRODUCTION

Preventive maintenance for the rain gauge consists of keeping both the collector and discharge water flow paths free of obstructions. Occasional cleaning and inspection of the tipping bucket is also necessary to ensure that the bucket operates properly. Due to its simple design, troubleshooting is performed via manual inspection.

10.5.2 PREVENTIVE MAINTENANCE

The frequency of an inspection and maintenance schedule depends on the environment of the rain gauge installation. Any malfunctions or damage that are detected should be corrected using the corrective maintenance procedure provided in this chapter. The maintenance log should be updated after each visit to record any maintenance required by the rain gauge. Recommended routine maintenance consists of visually inspecting the rain gauge and checking its calibration every 90 days to ensure proper operation and inspecting the connector between the collector assembly and the lower case annually for corrosion. Table 10.5.1 provides a procedure to accomplish this.

10.5.3 CORRECTIVE MAINTENANCE

10.5.3.1 **Introduction**. Corrective maintenance of the rain gauge consists of a visual inspection, testing the heater circuit, testing the fiberoptic module interfaced to the rain gauge, and removing and installing the rain gauge. Faults within the rain gauge are automatically detected by the data quality algorithm. If the present weather sensor is reporting moderate or heavy liquid precipitation and the rain gauge fails to indicate any accumulation, the system diagnostics log a rain gauge failure.

10.5.3.2 **Rain Gauge Testing**. Rain gauge testing includes visual inspection as defined in preventive maintenance, checking for proper heater operation, and testing the fiberoptic module in the DCP, which receives data from the rain gauge. A faulty rain gauge is isolated using the procedures provided in table 10.5.2.

10.5.3.3 **Rain Gauge Removal and Installation**. When a fault is isolated to the rain gauge (other than a tipping bucket switch or fiberoptic transmitter failure), the entire sensor must be replaced. The replacement sensor uses the same mounting hardware as the faulty sensor. The rain gauge removal and installation procedures are provided in table 10.5.3.

10.5.3.4 **Tipping Bucket Switch Removal and Installation**. The procedures required to remove and install the rain gauge tipping bucket switch are provided in table 10.5.4.

10.5.3.5 **Fiberoptic Transmitter Removal and Installation**. The procedures required to remove and install the rain gauge fiberoptic transmitter are provided in table 10.5.5.

Table 10.5.1. Rain Gauge Inspection and Calibration Check

Step	Procedure
	INSPECTION
	Tools required: Large flat-tipped screwdriver Carpenter's level Laboratory beaker Water **NOTE** Laptop computer initialized as DCP OID (Chapter3, Section III), or any other available OID, may be used for the following procedure.
1	At OID, display sensor status page (sequentially press REVIEW-SENSOR-STAT function keys from 1-minute display).
2	On sensor status page, set report processing for tipping bucket to OFF.
	WARNING Death or severe injury may result if power is not removed from sensor prior to maintenance activities. Ensure that heater circuit breaker (located in DCP) supplying power to sensor is set to off (right) position.
3	Inside DCP equipment cabinet, set circuit breaker on rain gauge circuit breaker module to off (right) position.
4	If sensor is equipped with wind shield, remove one section of wind shield to access rain gauge by performing the following: a. Using large flat-tipped screwdriver, loosen setscrews securing one section of bottom ring. b. Using large flat-tipped screwdriver, loosen setscrews securing one section of top ring to two support poles. Remove section of wind shield.
5	Ensure that rain gauge Collector A1 is free of obstructions.
6	Loosen two knurled retaining knobs securing collector to lower case.
	WARNING Heater on underside of collector funnel may be hot. Do not touch heater when removing collector. Failure to comply may result in thermal burns.
7	Lift Collector A1 straight up and remove from lower case.
8	Ensure that lower funnel is free of obstructions.
9	Check Tipping Bucket Frame A2A1 for level and adjust legs if required.
10	Ensure that tipping bucket is clean and tips freely.
11	Ensure that tipping bucket switch is intact and operating.
12	Using collector pin and alignment arrow on lower case as a guide, mount collector on lower case and tighten two retaining knobs on sides of lower case.
13	Annually inspect cable connector between collector assembly and lower case for corrosion. Remove corrosion if present and apply thin coat of DC-4 anti-corrosion compund to connector pins.
	CALIBRATION CHECK
$ 1	Using laboratory beaker, pour 195 milliliters of water slowly into rain gauge over a 1-minute period. Ensure that this causes 10 ±1 tips.

Table 10.5.1. Rain Gauge Inspection and Calibration Check -CONT

Step	Procedure
2	At OID, display second page of 12-hour archive (sequentially press REVUE-SENSOR-12 HR function keys from 1-minute display). Verify that precipitation amount (total for 2 adjacent minutes) matches the number of tips that occurred as follows: No. of tips — Precipitation 9 — 0.09 to 0.10 10 — 0.10 to 0.11 11 — 0.11 to 0.12
	WRAP UP
1	If sensor is equipped with windshield, install open section of wind shield by performing the following: a. Install top ring of wind shield in connectors at top of two support poles. Using large flat-tipped screw driver, tighten two setscrews securing each end of section. b. Connect bottom ring of windshield to two adjacent sections. c. Using large flat-tipped screwdriver, tighten two setscrews securing each end of section.
2	Inside DCP equipment cabinet, set circuit breaker on rain gauge circuit breaker module to on (left) position.
3	At OID, display sensor status page (sequentially press REVIEW-SENSOR-STAT function keys from 1-minute display).
4	On sensor status page, set report processing for tipping bucket to ON.

Table 10.5.2. Liquid Precipitation Accumulation Sensor Fault Isolation

Step	Procedure
	Tools required: RS-232 Test Tool Digital multimeter (DMM) Small flat-tipped screwdriver
1	Visually inspect rain gauge using guidelines of table 10.5.1, steps 1 through 11.
2	In conditions of freezing temperatures, check input funnel of rain gauge for the presence of ice. If ice is present, perform the following: The nominal resistance of both heaters is approximately 0.010 ohm. a. At power control module in DCP, ensure that rain gauge heater circuit breaker is set to ON position. **WARNING** AC power is present at rain gauge when DCP power control module is set to ON position. Use extreme care when working on equipment with ac power applied. **NOTE** Do not short the leads to the tipping bucket switch or cause the tipping bucket switch to be closed for long periods of time. Do not leave the DMM connected across the tipping bucket switch for longer than 30 seconds to measure current flow. These actions will drain the battery at a faster rate and shorten the life expectancy of the battery. b. At rain gauge, remove the sensor's bottom plate and referring to wiring diagram in Section IV, connect DMM across heater ac input. DMM should indicate between 107 and 130 volts ac. If so, replace rain gauge. If reading is not correct, replace rain gauge heater circuit breaker module in DCP (refer to Chapter 3).

Table 10.5.2. Liquid Precipitation Accumulation Sensor Fault Isolation -CONT

Step	Procedure
3	Place leads of DMM (in current mode) across terminals of tipping bucket switch (with switch open). A current of 8 mA or higher is an indication of a good battery. If the current is below 8 mA, replace Fiberoptic Transmitter A2A2A1.
4	Check operation of tipping bucket switch by performing the following: a. Using small flat-tipped screwdriver, disconnect one leg of tipping bucket switch A2A1S1 from terminal on side of Tipping Bucket Frame A2A1. b. Connect DMM across both legs of tipping bucket switch. c. Rock tipping bucket back and forth to actuate tipping bucket switch. Ensure that DMM indicates continuity when switch is actuated. If continuity is not observed, replace tipping bucket switch A2A1S1. d. If tipping bucket switch is operating properly, reconnect free leg of switch to terminal.
5	Check operation of rain gauge/DCP fiberoptic link by performing the following: a. At OID, access sensor configuration page. Determine the SIO port to which the rain gauge is assigned. Refer to the list of port assignments for DCP SIO boards (Chapter3, Section IV) to identify the corresponding fiberoptic module. b. In DCP, connect RS-232 test tool in line with rain gauge fiberoptic module (between fiberoptic module and corresponding DB-9 connector from cabinet harness). c. Actuate tipping bucket switch A2A1S1 in rain gauge and verify that RxD indicator on RS-232 test tool illuminates. If RxD indicator illuminates (and rain gauge data are not being received by the system), replace corresponding SIO board in DCP. If RxD indicator on test tool fails to illuminate while the tipping bucket switch is actuated, remove and replace the following, in order, until the problem is corrected: (1) Fiberoptic module in DCP (2) Fiberoptic transmitter in rain gauge

Table 10.5.3. Liquid Precipitation Accumulation Sensor Removal and Installation

Step	Procedure
	REMOVAL
	Tools required: Large flat-tipped screwdriver Small flat-tipped screwdriver 7/16-inch socket Adjustable wrench **NOTE** Laptop computer initialized as DCP OID (Chapter 3, Section III), or any other available OID, may be used for the following procedure.
1	At OID, display sensor status page (sequentially press REVIEW-SENSOR-STAT function keys from 1-minute display).

Table 10.5.3. Liquid Precipitation Accumulation Sensor Removal and Installation -CONT

Step	Procedure
2	On sensor status page, set report processing for tipping bucket to OFF. **WARNING** Death or severe injury may result if power is not removed from sensor prior to maintenance activities. Ensure that heater circuit breaker (located in DCP) supplying power to sensor is set to off (right) position.
3	Inside DCP equipment cabinet, set circuit breaker on rain gauge circuit breaker module to off (right) position.
4	If sensor is equipped with windshield (Figure 10.2.1, sheet 1), remove one section of windshield to access rain gauge by performing the following: a. Using large flat-tipped screwdriver, loosen setscrews securing one section of bottom ring. b. Using large flat-tipped screwdriver, loosen setscrews securing one section of top ring to two support poles. Remove section of wind shield.
5	Loosen two knurled retaining knobs securing Collector A1 to lower case.
6	Lift Collector A1 straight up and remove from Lower Case A2.
7	Carefully remove tipping bucket by tilting and lifting from Bucket Frame A2A1.
8	Using small flat-tipped screwdriver, remove two screws securing Bucket Frame A2A1 to lower case. **CAUTION** If tipping bucket switch is of the mercury type it is very sensitive. Remove the bracket and switch assembly together, holding the assembly with the switch lead wires up; otherwise, the mercury pool could get stuck in the top end of the switch. The mercury switch is readily identifiable by the transparent vial which is vertically positioned in its bracket, while the reed switch is opaque and cylindrical and is mounted horizontally in its bracket.
9	Carefully lift Bucket Frame A2A1 to gain access to terminal board located on side.
10	Disconnect sensor wiring harness (two wires from fiberoptic transmitter) from Bucket Frame A2A1 terminal board.
11	To remove tipping bucket switch A2A1S1: a. Disconnect terminals from terminal board. b. Remove screws from switch bracket and remove assembly intact; if switch is mercury, hold assembly with wires up.
12	Using 7/16-inch socket, loosen six 1/4 - 20 bolts and jamnuts (two on each leg) securing lower case to legs.
13	Using small flat-tipped screwdriver, remove four screws securing Bottom Plate A2A2 to lower case.
14	Disconnect heater ac input wiring from terminals 3, 4, and 5 on bottom plate terminal board.
15	Disconnect fiberoptic cable from bottom plate Fiberoptic Transmitter A2A2A1.
16	Disconnect flexible conduit and remove wires through hole in bottom plate.
17	Remove lower case from sensor support legs.
18	Remove 1/4 - 20 bolt and flat washer securing each sensor support leg to base plate. Remove three sensor support legs.

Table 10.5.3. Liquid Precipitation Accumulation Sensor Removal and Installation -CONT

Step	Procedure
	INSTALLATION
	Tools required: 7/16-inch socket Small flat-tipped screwdriver Adjustable wrenches
1	At OID, ensure that report processing for tipping bucket is set to OFF. **WARNING** Death or severe injury may result if power is not removed from sensor prior to maintenance activities. Ensure that heater circuit breaker (located in DCP) supplying power to sensor is set to off (right) position.
2	Inside DCP equipment cabinet, ensure that circuit breaker on rain gauge circuit breaker module is set to off (right) position.
3	Install three 1/4 - 20 bolts and flat washers securing sensor support legs to base plate. Legs should be free to rotate and will be tightened after sensor is mounted.
4	Using 7/16-inch socket, install, but do not tighten, six 1/4 - 20 bolts and jamnuts in mounting holes on lower case leg brackets.
5	Using small flat-tipped screwdriver, remove four screws securing bottom plate to lower case.
6	Using large adjustable wrench at flexible conduit for rain gauge pedestal, remove large nut from end of conduit. Ensure that gasket (rubber gasket with metal gasket holder) is in place on metal conduit cap (rubber gasket toward sensor).
7	Route ac wiring and fiberoptic cable from DCP through wiring hole (not center drain hole) in Bottom Plate A2A2 and slide threaded end of flexible conduit cap through same hole. Using large adjustable wrench, install attaching nut to conduit cap securing flexible conduit to bottom plate.
8	Connect heater ac wiring from DCP to terminal block on Bottom Plate A2A2 as follows: Wire — Terminal Jumper — 1 to 2 Green (ground) — 3 Red (ac line) — 4 Yellow — 5
9	Connect fiberoptic cable to bottom plate Fiberoptic Transmitter A2A2A1.
10	Using small flat-tipped screwdriver, install four screws securing bottom plate to lower case.
11	Position Lower Case A2 on sensor support legs.
12	Connect sensor earth ground to grounding stud on Bottom Plate A2A2.
13	Level lower case and tighten three bolts securing legs to base plate and six bolts securing lower case to legs. **CAUTION** If tipping bucket switch is of the mercury type, be careful to hold the switch and bracket assembly with the wire leads upward; otherwise, the mercury pool could get stuck in the top end of the switch.
14	Place tipping bucket switch A2A1S1 intact with its mounting bracket on tipping bucket frame and secure with mounting screws.
15	Connect terminal lugs of tipping bucket switch to Bucket Frame A2A1 terminal board. If a mercury type tipping bucket switch is to be replaced connect the capacitor to Bucket Frame A2A1 terminal board.

Table 10.5.3. Liquid Precipitation Accumulation Sensor Removal and Installation -CONT

Step	Procedure
16	Connect sensor wiring harness (two wires from fiberoptic transmitter) to Bucket Frame A2A1 terminal board. **CAUTION** If tipping bucket switch is of the mercury type it is very sensitive. Care should be taken when handling the switch and bracket assembly to keep the lead wires up; otherwise, the mercury pool could get stuck in the top end of the switch.
17	Position Bucket Frame A2A1 on brackets in top of lower case.
18	Using small flat-tipped screwdriver, install two screws securing bucket frame to brackets.
19	Install tipping bucket in bucket frame with magnet facing tipping bucket switch.
20	Tip the tipping bucket several times by hand to ensure that it moves freely in Bucket Frame A2A1. At each tip, the magnet's passing the tipping bucket switch causes a momentary contact in switch. Magnet should not touch switch. If necessary, position of mercury switch can be adjusted by loosening screws securing switch to frame casting and again tightening them after moving switch and bracket assembly. If necessary, position of reed type switch can be adjusted by loosening plastic nuts securing switch to bracket assembly and again tightening them after moving switch.
21	Using locating pin and arrows on outside of Collector A1 as guides, carefully mount collector on lower case.
22	Tighten two knurled retaining knobs.
23	Perform rain gauge inspection and calibration check in accordance with table 10.5.1.

Table 10.5.4. Tipping Bucket Switch Removal and Installation

Step	Procedure
	REMOVAL
	Tools required: Large flat-tipped screwdriver Small flat-tipped screwdriver Adjustable wrench **NOTE** Laptop computer initialized as DCP OID (Chapter 3, Section III), or any other available OID, may be used for the following procedure.
1	At OID, display sensor status page (sequentially press REVIEW-SENSOR-STAT function keys from 1-minute display).
2	On sensor status page, set report processing for tipping bucket to OFF. **WARNING** Death or severe injury may result if power is not removed from sensor prior to maintenance activities. Ensure that heater circuit breaker (located in DCP) supplying power to sensor is set to off (right) position.
3	Inside DCP equipment cabinet, set circuit breaker on rain gauge circuit breaker module to off (right) position.

Table 10.5.4. Tipping Bucket Switch Removal and Installation -CONT

Step	Procedure
4	If sensor is equipped with wind shield, remove one section of wind shield to access rain gauge by performing the following: a. Using large flat-tipped screwdriver, loosen setscrews securing one section of bottom ring. b. Using large flat-tipped screwdriver, loosen setscrews securing one section of top ring to two support poles. Remove section of wind shield.
5	Loosen two knurled retaining knobs securing Collector A1 to lower case.
	WARNING Heater on underside of collector funnel may be hot. Do not touch heater when removing collector. Failure to comply may result in thermal burns.
6	Lift Collector A1 straight up and remove from Lower Case A2.
7	Carefully remove tipping bucket by tilting and lifting from Bucket Frame A2A1.
8	Using small flat-tipped screwdriver, remove two screws securing Bucket Frame A2A1 to lower case. **CAUTION** If tipping bucket switch is of the mercury type, it is very sensitive. Care should be taken when moving switch to avoid getting mercury stuck in top of switch.
9	Carefully lift Bucket Frame A2A1 to gain access to terminal board located on side.
10	Remove tipping bucket switch A2A1S1 by: a. Disconnecting the two terminal lugs from the terminal board. b. If the tipping bucket switch is of the mercury type, remove the capacitor from the terminal board and pull the switch from mounting socket. c. If the tipping bucket switch is of the reed type, remove the switch from mounting bracket by loosening the two plastic retaining nuts with an adjustable wrench and then remove one of the plastic nuts from the reed switch. Remove the reed switch from the mounting bracket.
	INSTALLATION
	Tools required: Small flat-tipped screwdriver Adjustable wrench
1	At OID, ensure that report processing for tipping bucket is set to OFF.
	WARNING Death or severe injury may result if power is not removed from sensor prior to maintenance activities. Ensure that heater circuit breaker (located in DCP) supplying power to sensor is set to off (right) position.
2	Inside DCP equipment cabinet, ensure that circuit breaker on rain gauge circuit breaker module is set to off (right) position.
3	Ensure that tipping bucket is removed from Bucket Frame A2A1.

Table 10.5.4. Tipping Bucket Switch Removal and Installation -CONT

Step	Procedure
4	Ensure that Bucket Frame A2A1 is loosened from lower case to gain access to terminal board on side of frame. **CAUTION** If the tipping bucket switch is of the mercury type, it is very sensitive. Care should be taken when moving switch to avoid getting mercury stuck in top of switch.
5	Slide tipping bucket switch A2A1S1 into mounting bracket.
6	If tipping bucket switch is of the mercury type, connect capacitor and mercury switch terminal lugs to Bucket Frame A2A1 terminal board. If tipping bucket switch is of the reed type, install plastic retaining nuts on switch on either side of mounting bracket. Adjust switch to allow magnet to pass within 1/4" of switch. Install switch terminal lugs to Bucket Frame A2A1 terminal board.
7	Position Bucket Frame A2A1 on brackets in top of lower case.
8	Install tipping bucket in bucket frame with magnet facing tipping bucket switch.
9	Using small flat-tipped screwdriver, install two screws securing bucket frame to brackets.
10	Tip the tipping bucket several times by hand to ensure that it moves freely in Bucket Frame A2A1. At each tip, the magnet's passing the tipping bucket switch causes a momentary contact in switch. Magnet should not touch switch. If necessary, position of mercury switch can be adjusted by loosening screws securing switch to frame casting and again tightening them after moving switch and bracket assembly. If necessary, position of reed type switch can be adjusted by loosening plastic nuts securing switch to bracket assembly and again tightening them after moving switch.
11	Using locating pin and arrow on outside of Collector A1 as guides, carefully mount collector on lower case.
12	Tighten two knurled retaining knobs.
13	Perform rain gauge inspection and calibration check in accordance with table 10.5.1.

Table 10.5.5. Fiberoptic Transmitter Removal and Installation

Step	Procedure
	REMOVAL
	Tools required: Flat-tipped screwdriver Small flat-tipped screwdriver 7/16-inch socket **NOTE** Laptop computer initialized as DCP OID (Chapter 3, Section III), or any other available OID, may be used for the following procedure.
1	At OID, display sensor status page (sequentially press REVIEW-SENSOR-STAT function keys from 1-minute display).
2	On sensor status page, set report processing for tipping bucket to OFF. **WARNING** Death or severe injury may result if power is not removed from sensor prior to maintenance activities. Ensure that heater circuit breaker (located in DCP) supplying power to sensor is set to off (right) position.

Table 10.5.5. Fiberoptic Transmitter Removal and Installation - CONT

Step	Procedure
3	Inside DCP equipment cabinet, set circuit breaker on rain gauge circuit breaker module to off (right) position.
4	If sensor is equipped with wind shield, remove one section of wind shield to access rain gauge by performing the following: a. Using large flat-tipped screwdriver, loosen setscrews securing one section of bottom ring. b. Using large flat-tipped screwdriver, loosen setscrews securing one section of top ring to two support poles. Remove section of wind shield.
5	Loosen two knurled retaining knobs securing Collector A1 to lower case. **WARNING** Heater on underside of collector funnel may be hot. Do not touch heater when removing collector. Failure to comply may result in thermal burns.
6	Lift Collector A1 straight up and remove from Lower Case A2.
7	Carefully remove tipping bucket by tilting and lifting from Bucket Frame A2A1.
8	Using small flat-tipped screwdriver, remove two screws securing Bucket Frame A2A1 to lower case. **CAUTION** If tipping bucket switch is of the mercury type, it is very sensitive. Care should be taken when moving switch to avoid getting mercury stuck in top of switch.
9	Carefully lift Bucket Frame A2A1 to gain access to terminal board located on side.
10	Using small flat-tipped screwdriver, disconnect sensor wiring harness (two wires from fiberoptic transmitter) from bucket frame terminal board.
11	Remove Bucket Frame A2A1 (with tipping bucket switch) from lower case.
12	Using 7/16-inch socket, loosen six 1/4 - 20 bolts and jamnuts (two each leg) securing lower case to legs.
13	Using small flat-tipped screwdriver, remove four screws securing Bottom Plate A2A2 to lower case.
14	Remove Lower Case A2 from sensor support legs to gain access to Fiberoptic Transmitter A2A2A1.
15	Disconnect fiberoptic cable from bottom plate Fiberoptic Transmitter A2A2A1.
16	Using small flat-tipped screwdriver, remove four screws, plastic spacers, lockwashers, and nuts securing Fiberoptic Transmitter A2A2A1 to mounting shelf on Bottom Plate A2A2.
	INSTALLATION
	Tools required: Small flat-tipped screwdriver Carpenter's level 7/16-inch socket Adjustable wrench
1	At OID, ensure that report processing for tipping bucket is set to OFF. **WARNING** Death or severe injury may result if power is not removed from sensor prior to maintenance activities. Ensure that heater circuit breaker (located in DCP) supplying power to sensor is set to off (right) position.
2	Inside DCP equipment cabinet, ensure that circuit breaker on rain gauge circuit breaker module is set to off (right) position.
3	Using small flat-tipped screwdriver, install four screws, plastic spacers, lockwashers, and nuts securing Fiberoptic Transmitter A2A2A1 to mounting shelf on Bottom Plate A2A2.
4	Connect fiberoptic cable to bottom plate Fiberoptic Transmitter A2A2A1.

Table 10.5.5. Fiberoptic Transmitter Removal and Installation - CONT

Step	Procedure
5	Position Lower Case A2 on sensor support legs.
6	Feed two wires from fiberoptic transmitter through tube in Lower Case A2.
7	Using small flat-tipped screwdriver, install four screws securing Bottom Plate A2A2 to lower case.
8	Level lower case and using 7/16-inch socket, tighten six 1/4 - 20 bolts and jamnuts securing lower case to legs. **CAUTION** If tipping bucket switch is of the mercury type, it is very sensitive. Care should be taken when moving switch to avoid getting mercury stuck in top of switch.
9	Position Bucket Frame A2A1 (with tipping bucket switch) on brackets in top of lower case.
10	Using small flat-tipped screwdriver, connect two wires from fiberoptic transmitter to terminal board on side of Bucket Frame A2A1.
11	Install tipping bucket in bucket frame with magnet facing tipping bucket switch.
12	Using flat-tipped screwdriver, install two screws securing Bucket Frame A2A1 to brackets.
13	Tip the tipping bucket several times by hand to ensure that it moves freely in Bucket Frame A2A1. At each tip, the magnet's passing the tipping bucket switch causes a momentary contact in switch. Magnet should not touch switch. If necessary, position of mercury switch can be adjusted by loosening screws securing switch to frame casting and again tightening them after moving switch and bracket assembly. If necessary, position of reed type switch can be adjusted by loosening plastic nuts securing switch to bracket assembly and again tightening them after moving switch.
14	Using locating pin and arrow on outside of Collector A1 as guides, carefully mount collector on lower case.
15	Tighten two knurled retaining knobs.
16	Perform rain gauge inspection and calibration check in accordance with table 10.5.1.